

Parasites: An Ancient Diagnosis for Modern Times

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Introduction

Practitioners of biological medicine should thoughtfully and routinely consider parasitic infection in their differential diagnosis. A differential diagnosis that fails to include parasitic infection, especially among the chronically ill patient population, is dangerously incomplete. Embracing an old and simple tenet common to all traditional medical systems may indeed serve us well: parasites infect us, often, and their presence can be life threatening.

Background

Protozoa and helminths are the broad classes of parasites that this article considers, as these are responsible for substantial morbidity and mortality worldwide.¹⁻³

Admittedly, our close interaction with these organisms elicits both positive and negative sequelae, and the definition of a parasite itself – an organism that lives at the expense of its host – fails markedly short of describing the intricate relationship that we have with parasitic beings. The emerging understanding of the relationship between our immune system, human biome, and all environmental influences is astounding. These complex relationships are none other than completely pervasive to who we are as human beings.

Within the past 25 years, the germ theory of illness has fully met its match in the hygiene hypothesis. A notable example is the use of *Trichuris suis* ova (pig whipworm eggs) in treating inflammatory bowel disorders.

However, it should be clearly understood that the vast majority of parasites, particularly those adapted

to infecting their human hosts, are not conveniently immunosuppressive in the authors' experience. Infestations may also not be localized in the gut; more commonly in chronic illness, patients become systemic with larval stages straying far from the intestines, setting up home in distant places such as connective tissue, liver, heart, and brain. By and large, parasites increase systemic inflammation and further disease processes.

Influenced by our ever-changing environment, ever-increasing toxic burden, and subsequent epigenetic mutations (epimutations), our coevolution with these creatures is an ever-changing phenomenon which is most certainly contributing to our human fate.

Research supporting the fascinating interaction between toxic burden and parasitic illness has been presented at several of Dr. Klinghardt's most recent and groundbreaking workshops. Parasites are not only more likely to infect hosts toxic with heavy metals, but many parasites also bioaccumulate metals and thus reduce the tissue levels of their hosts.⁴⁻¹⁰ Indeed, in modern times we may be in great debt to our parasitic infections. We should be mindful and respectful of this relationship, even when our end goal is eradication.

Beyond the Western Consensus

Physicians trained in Western medicine simply fail to consider that many parasitic infections exist in developed countries and thus clinicians lack the appreciation for the true threat that these diseases represent.¹¹ A telling example of modern susceptibility is *Taenia solium*

(pork tapeworm) infection, resulting in neurocysticercosis and seizures, occurring amongst the Orthodox Jewish population in New York City: patients who do not eat pork nor have traveled to an endemic country are still at risk.¹²

The most well-known and accepted parasitic infections in the US are pinworm (*Enterobius vermicularis*), *Trichomonas vaginalis*, *Toxoplasma gondii*, *Giardia intestinalis* (lamblia), and *Cryptosporidium* spp.¹ Otherwise, parasitology often falls under the jurisdiction of "tropical medicine," an area pertaining solely to developing countries and their travelers. A recent (2014) publication from *American Family Physician* titled "Neglected Parasitic Infections: What Every Family Physician Needs to Know" was a long overdue acknowledgment of some additional parasitic illnesses in the US, including Chagas disease (*Trypanosoma cruzi*), toxocariasis (*Toxocara* spp. of roundworms), and cysticercosis (*Taenia solium*), and their pervasiveness.

In actuality, the extensive medical literature concerning tropical medicine at large should not be considered "other." Our existence as a global community and the likelihood of parasitic exposure affects everyone despite modern hygiene, sanitation, and medical advances. Indeed, several parasites can infect humans without regard to hygiene and sanitation, via skin penetration: hookworm, *Necator americanus* and *Ancylostoma duodenale*, and the *Schistosoma* spp.

Emotional connotations surrounding parasitosis burdens its acceptance in general practice. Nothing is simultaneously more fascinating and

disturbing to the human experience than visualizing a macroscopic parasite. Passing a macroscopic parasite is a humbling experience indeed, and the mere possibility of doing so frightens most. Many patients seeking treatment of Lyme disease, autoimmune disease, heavy metal toxicity, and so on, are reluctant to embrace an additional or even more accurate assessment of their condition when parasitic infection is suggested. Much education and support must accompany parasitic illness, to gently desensitize patients to the diagnoses. Many patients become enthralled by their parasitic experiences, and we are privy to a plethora of visual documentation of their parasite "journeys": the macroscopic parasites, the unusual stools, dermatological manifestations, and what is understood to be the biofilm communities of parasites being expelled on a regular basis when the proper treatment is employed.

Lungworm, or a new species of roundworm identified by Lawrence A. Klapow as *Varestrongylus klapowi* (previously *Cryptostrongylus pulmoni*), is frequently encountered in the authors' experience. Many species falling under the "taxonomy unknown" category, including such phenomena as the rope parasite, are yet to be elucidated, but they are daily phenomena for our chronically ill population.¹³ It is speculated that the rope parasite is an intelligent biofilm community composed of different parasite DNA, previously referred to as simply "mucus" by the alternative health community.

Assessment and Diagnosis

Traditional Chinese Medicine, Ayurvedic medicine, and traditional naturopathic medicine have all classically considered parasitic illness in their teachings. It would serve our respective professions well to embrace these roots. The modern obscurity surrounding the existence and classification of parasites is upheld by diagnostic shortcomings. The rate of parasite detection is less than 12%, according to recent communication between Dr. Klinghardt and a leading parasitology lab. The gold standard of

many parasite diagnoses, stool ova and parasite testing, is notorious for its low predictive value; expertise in species-specific preparations and procedures is lacking.^{14,15} The eagerness to improve these bleak statistics is evident in a hopeful array of diagnostic advancements.^{16,17}

Nevertheless, performing a detailed physical examination, obtaining a thorough history of present illness, evaluating routine laboratory work, and utilizing the diagnostic prowess of established methods of biofeedback (e.g., Autonomic Response Testing, Matrix Reflex Testing, etc.) enable a practitioner to become perceptive to parasitic illness.

All aspects of the physical exam may pertain to this broad class of infectious disease. Organ-specific effects can be a consequence of a parasite's natural life cycle as well as accidental habitation. Abdominal palpation often reveals the "ropey consistency" of chronic inflammation as most parasitic life cycles compromise bowel health. Palpable, nonfixated abdominal masses, gall bladder tenderness, and liver enlargements are frequent. Overt and subtle signs of nutritional deficiency (e.g., angular cheilitis, macroglossia, etc.), rashes and skin abnormalities (e.g., circumoral pallor), respiratory and cardiovascular abnormalities, fundoscopic findings, and so on may all support parasite involvement.

Review of systems is likewise all encompassing. Cyclical febrile illness, particularly correlating to moon cycles, and fatigue and various pain presentations including fibromyalgia should alert the clinician to infectious and toxic etiologies, including parasitosis. Any quality of bowel function may be present: diarrhea, constipation, and everything in between. Most patients are chronically constipated and/or experience irritable bowel symptoms. Patients may present with disturbed urinary function, unusual bleeding, shortness of breath, cognitive impairments, neurological symptoms (notably seizures), and/or a wide range of behavior (food cravings, sleep disturbance, etc.) Psychiatric symptoms may indeed be

pathognomonic for parasitic illness.

General laboratory investigation of the patient routinely reveals elevated eosinophil counts, especially under the duress of helminth infection.^{1,18} Protozoa are believed to reflect T cell, B cell, and macrophage dependent immune reactions, and thus a wide variety of white blood cell abnormalities are common.¹⁸

Absence of eosinophil elevation should not rule out parasitic infection. Note that the degree of eosinophil elevation may or may not correlate to severity of infection, both quantitatively and qualitatively; rather, correlation with present-time symptom severity is more likely.¹⁸

The authors routinely see eosinophils in high normal range, monocytes in high normal range in combination with a general low white blood count (5000 or below). Strong correlations exist between both microcytic and macrocytic anemia.¹⁹ Nutrient deficiencies are rampant, including decreases in fat-soluble vitamins due to sluggish bile. Marginally elevated liver enzymes are common with increased oxidative stress markers (e.g., elevated GGT). Lowered detoxification capacity and biotransformation can increase TGF beta 1, cal protection, beta-glucuronidase, and so on, and these measurements should be considered dysbiotic consequences at large.

Indeed, the current concept of dysbiosis with its bacterial, viral, and fungal basis should be considered the "tip of the iceberg": deeper and more systemic parasitic issues are usually present. As mentioned earlier, heavy-metal toxicity and toxic burden findings at large should prompt a physician to consider parasitic illness.

In sum, many patients with negative parasitic labs will pass worms when empirically treated. Treatment often results in rapid improvements, although improvement can be delayed 4 to 6 months. Certainly the benefits of nutritional improvement, immune modulation, and so on take time, and the course of treatment needed for lasting improvement is quite variable. Many late-stage pathologies and



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diagnoses, including any cancer under the diaphragm (liver, bowel, pancreas), should lead to parasitology workup and/or empirical treatment.

Treatment Options

Treatment of parasitic illness is an ever-evolving practice. Treatment options can be general and/or species specific but should always be tailored to the full range of functional diagnoses that each patient has. Those familiar with Autonomic Response Testing will observe that parasite illness often creates the phenomenon of "neurological switching." In the authors' experience, parasites are quite adept at controlling nervous function to their advantage. Therapies that amend any neurological switching in a patient will vastly increase the success of their antiparasitic regime. Those unfamiliar with Autonomic Response Testing can simply counsel their patients to pursue the full range of Emotional Freedom Technique tapping points every time they take their antiparasitic medicines. Acupressure with points concentrating on appropriate meridians is another effective tool that can augment any treatment program.

Rectal approaches to treatment are often paramount, allowing bioactive compounds to more effectively reach the liver and bowel. Chlorine dioxide enemas, eucalyptus enemas, milk enemas, and other herbal enemas and colon hydrotherapy are indispensable to most patients. We have seen the most success with chlorine dioxide enemas. Careful instruction and experience with chlorine dioxide ensures patient safety and success.

Nexus Suppository by BioPure (a garlic and artemisinin combination) is a powerful therapy for parasites burdening the liver. Rectal ozone insufflation should also be considered. Not all clinics are equipped for this application, but patients can buy home units from Longevity and other manufacturers – a fantastic investment.

Practitioners and patients should be aware that treatment length is substantial, and it is not unusual after

2 years for patients to still be passing parasites daily to weekly. Biological remedies should naturally be emphasized throughout this expected course, although pharmaceuticals certainly have a place in overall management, especially for specific phases of treatment. These include praziquantel, ivermectin, pyrantel pamoate, albendazole, nitazoxanide, and iodoquinol. Simon Yu, MD, a pioneer in antiparasitic treatment, and his book *Accidental Cure* should be mentioned here for their substantial contribution to this field.²⁰ While injectable forms of these medications have been available in the veterinary and livestock arena for years, human use is only beginning to surface as a viable option for oral-resistant cases.²¹ Dr. Hofmann has worked with Key Pharmacy (Federal Way, Washington) to compound injectable ivermectin, and the authors have utilized it with great success.

Appreciation for the vast array of herbal approaches continues to grow amongst our practitioners and patients. Classic naturopathic herbals include *Artemisia annua* (sweet wormwood), *Artemisia tridentata* (sagebrush), *Allium sativum* (garlic), *Gentiana lutea* (gentian), *Mahonia aquifolium* (Oregon grape), *Zingiber officinalis* (ginger), *Tanacetum vulgare* (tansy), *Azadirachta indica* (neem), *Hydrastis canadensis* (goldenseal), *Thuja plicata* (western red cedar), *Syzygium aromaticum* (clove), *Juglans nigra* (black walnut), *Dysphania ambrosioides* (formerly *Chenopodium ambrosioides*; epazote), *Ailanthus altissima* (Chinese tree of heaven), *Quassia amara* (quassia), *Picrasma excelsa* (Jamaican quassia), *Uncaria tomentosa* (cat's claw), *Tabebuia impetiginosa* (pau d'arco), *Citrus paradisi* (grapefruit seed), *Cucurbita moschata* (pumpkin seed), and *Carica papaya* (papaya seed). A lesser-known antiparasitic herb, but a popular prescription of the authors', is *Mimosa pudica*. Traditional Chinese Medicinals include preparations from *Areca catechu* (betel nut) and *Omphalia lapidescens* (thunderball fungus). Herbs should be rotated, pulsed, and combined appropriately for the patient.

General treatment strategies should always involve mental/emotional support and electromagnetic frequency (EMF) remediation. Because of the psychospiritual/emotional connection between parasites and their hosts, active psychotherapy should be considered. We routinely see the resolution of psychological conflicts result in the spontaneous passage of parasites. Most modern-day EMFs create an immune suppression and parasite advantage. Therefore, mitigation of deleterious EMF at the home and workplace renders antiparasitic treatment more effective.

On the other hand, energetic approaches should be used to the patient's advantage. The "Sputnik," now discontinued, was one such approach. It was a small metallic capsule that when swallowed pulsed a parasite-disabling field along its course through the intestines. Currently, use of pulsed electromagnetic field therapy (PEMF) over the abdomen is a wonderful tool. Parasites become aggravated and weakened by these frequencies, and some may even die. Homeopathics (e.g., *Pekana Helmin*), particularly the nosodes, have classically been utilized with great success.

Note: Practitioners interested in learning more detailed treatment protocols can reference the Klinghardt Academy protocol manuals.

Treatment Considerations

The safety and efficacy of the many antiparasitic treatments available may certainly justify a therapeutic trial of treatment in many cases. However, physician direction and expertise in treating the chronically ill patient population are indispensable. A well-rounded protocol that addresses the patient holistically is required: parasitic infection never exists outside the context of other diagnoses and functional considerations. Both the direct and indirect immunological consequences of parasite-killing itself must be addressed. This may include anti-inflammatory support (even steroids when neurological manifestations such as seizures are a risk), detoxification support (particularly

heavy metal chelation and colon cleansing), and additional antimicrobial support for comorbid infections (viral and bacterial populations may increase during biofilm disruption and immune changes). Ketotifen, useful in decreasing histamine's effects, and rebamipide, helpful for mucosal protection and healing, may be employed.

In the authors' experience, individual parasite burden is most certainly proportional to a person's toxic burden. Minimally, the antiparasite treatment should be accompanied by aluminum, lead, and glyphosate detoxification protocols. Glyphosate toxicity likely creates a larval growth advantage in parasitic illness, and heavy metals are well-known components of biofilm communities in general. A dying parasite will release the stored toxins back into the host if proper support is lacking.

Therefore it is imperative to never give treatment without toxin binders to catch the biological "fallout" of antiparasitic treatment. The authors' favorites include ZeoBind (BioPure), G.I. Detox (Bio-Botanical Research), chlorella (BioPure), clays such as green clay (BioPure), and silica-rich products such as diatomaceous earth and microsilica (BioPure). The addition of weekly, biweekly, or even daily colon hydrotherapy sessions cannot be overemphasized. Replanting the gut with therapeutic amounts of probiotics is often necessary, and the immunological advances of fecal implants warrants their consideration in many cases.

As discussed, the mental and emotional manifestations of parasitic illnesses themselves must also be appreciated and addressed. Mental, emotional, and spiritual manifestations of parasitic illness have been given due consideration for millennia. Modern science and clinical observations uphold these associations. Our patients routinely present themselves clinically in predictable ways and also describe their experiences as harborers of parasitic infection in replicable ways.

Conclusion

Parasitic illness is so often a major contributing factor in a patient's ill health. We urge fellow practitioners of biological, functional, and holistic medicine to not overlook this possibility. Lack of diagnostic accuracy and the limited consensus reality at large should not prevent our patients from receiving this significant healing opportunity.

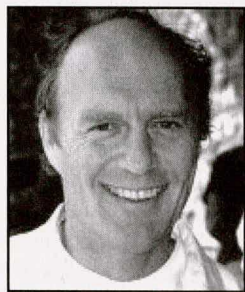
The legitimacy of observation and outcome should generally be honored. What comes out in the toilet and how the patient feels afterwards are invaluable data points. Indeed, the overall progression of a patient's health and well-being is the most important indication of great medicine, and certainly the most fulfilling for both practitioner and patient. We should continue to improve upon and refine the diagnosis and treatment of parasitic illness in the context of underlying toxic and genetic/epigenetic burden.

A great amount of clinical success can be found with antiparasitic treatment. Witnessing the success of our antiparasitic regimes continues to lend credence to our approach and bring joy to our practice of medicine.

Notes

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Dr. Allison Hofmann is a board-certified naturopathic doctor and a 2010 graduate of Bastyr University. Dr. Hofmann completed her undergraduate studies in psychology and neurobiology at Duke University. After establishing a busy practice on Long Island, New York, Dr. Hofmann returned to Washington State in 2013 to train under Dietrich Klinghardt, MD; she is the only American doctor to pass Dr. Klinghardt's INK certification exam in Germany. Dr. Hofmann now applies Dr. Klinghardt's revolutionary system of biological medicine and autonomic response testing to the benefit of her chronically ill patient population. A lifelong learner, Dr. Hofmann finds that her greatest teachers have



undoubtedly been her patients. The resilience, healing potential, and capabilities of the human body and spirit continue to inspire Dr. Hofmann.

Dietrich Klinghardt, MD, PhD, was born, raised and educated in West Germany, where he graduated from Freiburg Medical School/Albert Ludwigs University in 1975. He also studied psychology and completed a 3-year research project/PhD in angiology. He has been practicing medicine in the US since 1984 and specializes in the treatment of chronic illness and autism. He is widely recognized for his system of the "5 levels of Healing" and treatment of chronic Lyme disease without the use of antibiotics. His practice is in Woodinville, Washington.

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